Name:

at1113exam: Expand, factor, and solve quadratics (v304)

1. Expand the following expression into standard form.

$$(2x - 3)^2$$

$4x^2 - 6x - 6x + 9$

$4x^2 - 12x + 9$

2. Solve the equation.

$$(4x - 7)(2x + 9) = 0$$

$x = \frac{7}{4}$ $\quad$ $x = \frac{-9}{2}$

3. Expand the following expression into standard form.

$$(3x - 5)(8x - 9)$$

$24x^2 - 27x - 40x + 45$

$24x^2 - 67x + 45$

4. Expand the following expression into standard form.

$$(2x - 7)(2x + 7)$$

$4x^2 + 14x - 14x - 49$

$4x^2 - 49$

5. Solve the equation.

$$10x^2 + 50x + 60 \;=\; 5x^2 + 3x + 4$$

$$5x^2 + 47x + 56 = 0$$
$$(5x + 7)(x + 8) = 0$$
$$x = \frac{-7}{5} \qquad x = -8$$

6. Solve the equation with factoring by grouping.

$$6x^2 + 15x + 8x + 20 \;=\; 0$$

$$(3x + 4)(2x + 5) = 0$$
$$x = \frac{-4}{3} \qquad x = \frac{-5}{2}$$

7. Factor the expression.

$$49x^2 - 36$$

$$(7x - 6)(7x + 6)$$

8. Factor the expression.

$$x^2 - 11x + 24$$

$$(x - 3)(x - 8)$$